

CHAPTER EIGHT

ELECTRICAL SYSTEM

This chapter contains operating principles and service and test procedures for all electrical and ignition components. **Figure 1** shows the frame location of the electrical components.

Since this type of vehicle may be subjected to moisture and water, working on construction sites, in agricultural fields, etc, it is important to keep all electrical connections completely coupled to each other. It is also suggested that you apply Dielectric Compound (available from a Honda dealer) to all electrical connectors whenever they are disconnected and reconnected. This will help seal out moisture and help to prevent corrosion of the electrical connector terminals.

Information regarding the battery and spark plugs is covered in Chapter Three.

The electrical system includes the following systems:

- a. Charging system.
- b. Ignition system.
- c. Lighting system.

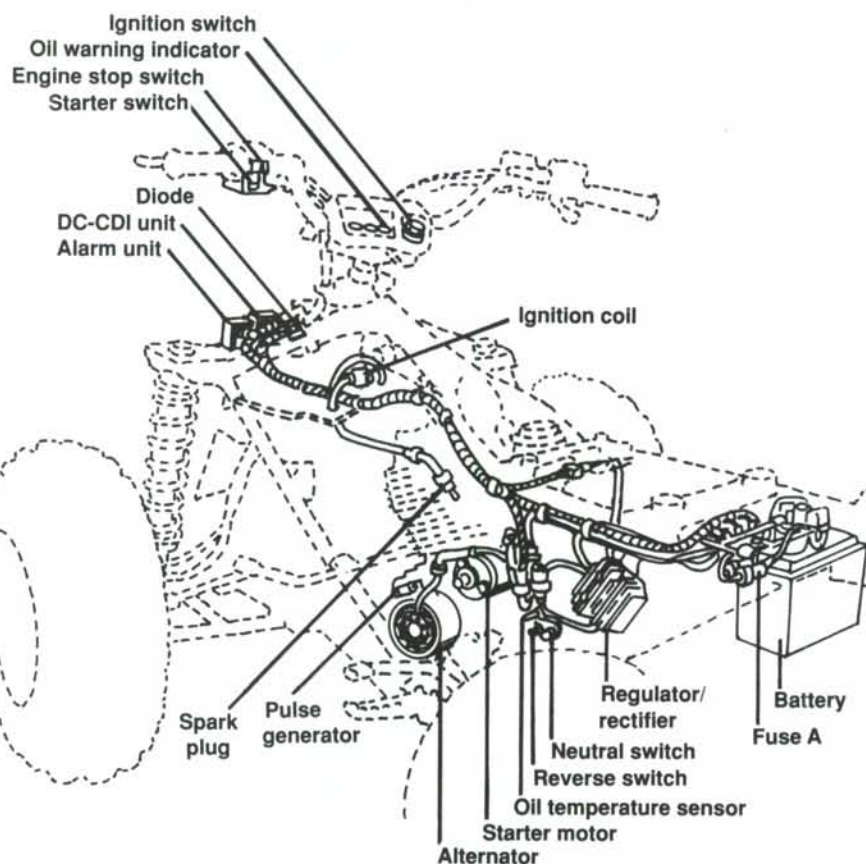
Tables 1-4 are at the end of this chapter.

CHARGING SYSTEM

The charging system consists of the battery, alternator and a voltage regulator/rectifier (**Figure 2**).

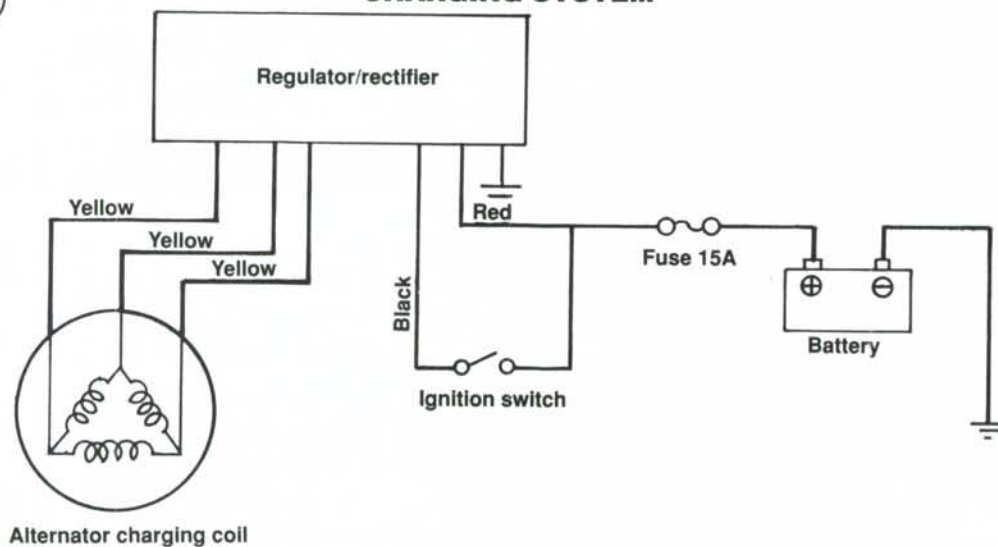
Alternating current generated by the alternator is rectified to direct current. The voltage regulator maintains the voltage to the battery and additional electrical loads (lights, ignition, etc.) at a constant voltage regardless of variations in engine speed and load.

1

ELECTRICAL COMPONENTS

8

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CHARGING SYSTEM

Leakage Test

Perform this test prior to performing the output test.

1. Remove the seat.
2. Turn the ignition switch OFF.
3. Remove the bolts (A, **Figure 3**) and remove the battery box cover (B, **Figure 3**).
4. Disconnect the battery negative lead (**Figure 4**).
5. Connect an ammeter between the battery negative lead and the negative terminal of the battery.
6. The ammeter should read less than 0.1 mA. If the amperage is greater, this indicates there is a voltage drain in the system that will drain the battery.

Charging System Output Test

Whenever charging system trouble is suspected, make sure the battery is fully charged and in good condition before going any further. Clean and test the battery as described under *Battery Testing* in Chapter Three.

Also make sure all electrical connectors within the charging system are tight and free of corrosion prior to making this test.

1. Start the engine and let it reach normal operating temperature; shut off the engine.
2. Place the vehicle on level ground and set the parking brake.
3. Remove the seat.

CAUTION

The main fuse and the sub fuse are next to each other within the battery box. The main fuse wires are red and the sub fuse wires are pink. Be sure to disconnect the main fuse in Step 4.

4. Remove the main fuse (**Figure 5**). Remember—the wires are red.
5. Connect a portable tachometer following the manufacturer's instructions.
6. Leave the battery wires connected to the battery and connect a 0-15 DC voltmeter between the battery terminals (**Figure 6**).
7. At the main fuse, connect a 0-10 DC ammeter to each end of the red wires as shown in **Figure 6**.

NOTE

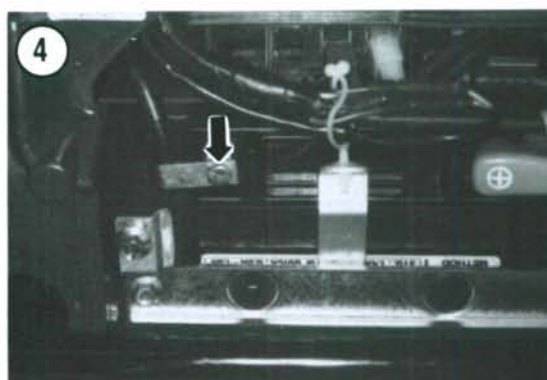
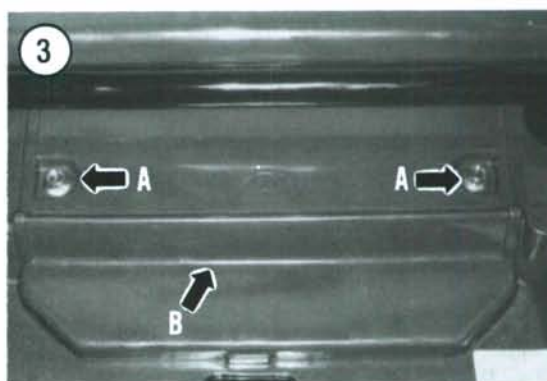
During the test, if the needle of the ammeter reads in the opposite direction on

the scale, reverse the polarity of the test leads.

CAUTION

*With the ammeter connected in the next step, do **not** start the engine with the starter as the ammeter will burn out when the electric starter is operated.*

8. Start the engine with the kickstarter and let it idle. Gradually increase engine speed to 5,000 rpm. The meter readings should be as follows:



- a. Voltage: 13.5-15.5 volts.
- b. Amperage: 0-5 amps.

If the charging current is considerably lower than specified, check the alternator and/or the regulator. Less likely is the possibility that the voltage is too high; in that case the voltage regulator is probably at fault.

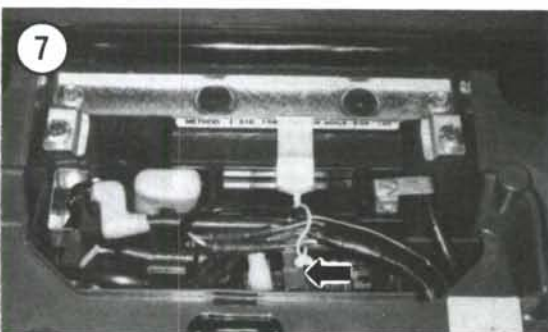
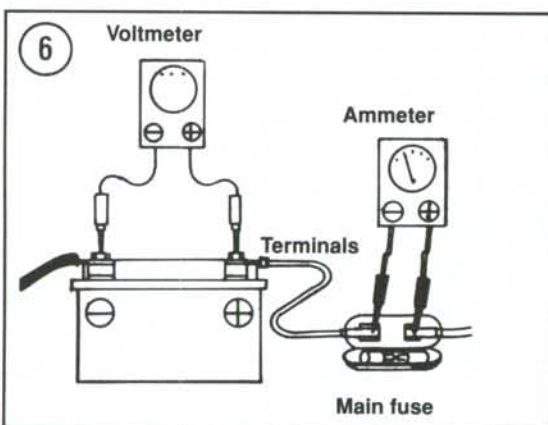
9. Test the separate charging system components as described under the appropriate headings in this chapter.
10. After the test is completed, disconnect the voltmeter and ammeter.
11. Reinstall the main fuse.
12. Install the battery cover, bolts and the seat.

ALTERNATOR

Alternator rotor and stator assembly removal and installation procedures are covered in Chapter Four.

Stator Charge Coil Testing

It is not necessary to remove the stator plate to perform the following tests. In order to get accurate



resistance measurements the stator assembly and coil must be warm (minimum temperature is 20° C—68°F). If necessary, start the engine and let it warm up to normal operating temperature.

1. Remove the seat.
2. Disconnect the white 3-pin electrical connector from the alternator.
3. Use an ohmmeter set at $R \times 10$ and check resistance between each yellow wire on the alternator side of the connector.
4. The specified resistance is 0.09-0.11 ohms. If there is continuity (indicated resistance) and it is within the specified resistance, the coil is good. If there is no continuity (infinite resistance) or the resistance is less than specified, the coil is bad and the stator assembly must be replaced (the individual coil cannot be replaced).
5. Use an ohmmeter set at $R \times 10$ and check resistance between each yellow wire and ground. If there is continuity (indicated resistance) between any yellow wire and ground the coil is shorted and the stator assembly must be replaced (the individual coil cannot be replaced).
6. Apply Dielectric Compound (available from a Honda dealer) to the electrical connector prior to reconnecting it. This will help seal out moisture.
7. Make sure the electrical connector is free of corrosion and is completely coupled to each other.

VOLTAGE REGULATOR/RECTIFIER

Voltage Inspection

If the regulated voltage is out of specification, measure the voltage between the following terminals.

1. Remove the seat.
2. Remove the bolts (A, **Figure 3**) and remove the battery box cover (B, **Figure 3**).
3. Disconnect the voltage regulator/rectifier 3-pin electrical connector (**Figure 7**) containing 3 wires (one red, one green and one black).
4. Connect a 0-15 DC voltmeter between the wiring harness side of the battery charge line terminals as follows: positive(+) to red and negative (-) to green. There should be battery voltage present.
5. Connect a 0-15 DC voltmeter between the wiring harness side of the battery voltage feedback line terminals as follows: positive(+) to black and nega-

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